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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/874,177	06/04/2001	Jui-Lung Li	005671/CMP/CMP	7638

32588 7590 11/21/2003

APPLIED MATERIALS, INC.
2881 SCOTT BLVD. M/S 2061
SANTA CLARA, CA 95050

EXAMINER

ELEY, TIMOTHY V

ART UNIT	PAPER NUMBER
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3724

DATE MAILED: 11/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/874,177

Applicant(s)

LI ET AL.

Examiner

Timothy V Eley

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art(AAPA) in view of Kaufman'293 et al.

a. The AAPA discloses a method for planarizing a substrate surface containing a metal or oxidized metal(the substrate surface containing copper), comprising; applying a composition to polishing media, the composition comprising; a pressure sensitive solution and about 10 wt.% of abrasive or less; and polishing the substrate; and the composition for planarizing a substrate. See applicant's specification at page 12, 1st full paragraph, page 17, paragraph 0063, paragraph 0064, and page 18, paragraph 0065.

b. The AAPA does not disclose that the composition includes one or more chemical agents comprising a complexing agent for complexing with a metal or oxidized metal(specifically copper) or the exact pH recited by applicant.

c. Kaufman et al disclose a method for planarizing a substrate surface containing a metal layer(specifically copper),

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comprising; applying a composition to polishing media, the composition comprising; a pressure sensitive solution; and one or more chemical agents comprising a complexing agent for complexing with a metal or oxidized metal (specifically the copper) and providing a pH between about 3 and about 7 (between 2.0 to 12.0); and polishing the substrate surface; and the composition for planarizing a substrate. See the abstract; page 2, paragraphs 0018, 0019, 0021; page 3, paragraph 0033; and page 4, paragraph 0034.

d. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method and composition of the AAPA by adding a complexing agent to the pressure sensitive solution as taught by Kaufman'923 et al for complexing with the metal or oxidized metal and providing a pH between about 3 and 7.

e. Regarding claims 6,7,15,16, these recitations are taught by the AAPA in view of Kaufman et al, since applicant is reciting a Markush group (claims 1 and 9) which includes some elements disclosed in Kaufman et al.

f. Regarding claims 8 and 20, the complexing agent comprises a complexing solution comprising citric acid, ammonium hydroxide (used as the pH adjuster, paragraph 0034), deionized water, and a pH between about 3 and about 7 (between 2.0 to 12.0). See paragraph 0019, paragraph 0021, paragraph 0033.

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g. Regarding claim 17, the AAPA discloses a contact pressure between about 1 psi and about 6 psi (see specifically paragraph 0063, lines 6 and 7).

h. Regarding claims 2,3,8,11,12,14,18, and 20, The exact vol% of the one or more chemical agents used would have been an obvious matter of choice to one having ordinary skill in the art at the time the invention was made, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Also, these values would depend upon the desired planarization of the substrate and the amount of metal to be complexed.

i. The exact wt.% of citric acid and ammonium hydroxide would have been an obvious matter of choice to one having ordinary skill in the art at the time the invention was made, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Also, these values would depend upon the desired planarization of the substrate and the amount of metal to be complexed. Furthermore, the exact wt.% of ammonium hydroxide would depend upon the desired pH, which is between about 2.0 to 12.0.

Response to Arguments

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

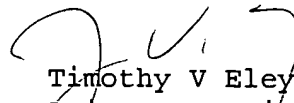
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Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy V Eley whose telephone number is 703-308-1824. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Allan N Shoap can be reached on 703-308-1082. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.


Timothy V Eley
Primary Examiner
Art Unit 3724

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